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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/734,598 | 12/13/2000 | Kiyoshi Toshimitsu | 200854US2RD | 3705 |
| 22850 | 7590 | 07/19/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | HOM, SHICK C | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2666 | | |
| DATE MAILED: 07/19/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/734,598 | TOSHIMITSU ET AL. <i>[Signature]</i> | |
| | Examiner | Art Unit | |
| | Shick C Horn | 2666 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12/13/00, 5/2/02.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3_4</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 2, 4-7, 9, 13-17, and 19-20 are objected to because of the following informalities: In claims 2, 4-7, 9, 13-17, and 19-20 line 1, the words "A radio" seem to refer back to "the radio" recited in claims 1, 3, 8, 12, and 18 line 1, respectively. If this is true, it is suggested changing "A radio" to ---The radio---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1-2, 5, 7, 8-10, and 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 11, claim 5 line 4, claim 8 line 6 which recite "the same channel" lacks clear antecedent basis because

Art Unit: 2666

no same channel have been previously recited in the claim and therefore the limitation is not clearly understood. In claim 1 line 12 which recite "the channels" lack clear antecedent basis. In claims 2 and 7 line 2 which recite "a mobile station" is not clear as to whether it is reciting ---the mobile station--- of claim 1 line 2 and claim 3 line 5, respectively. In claim 8 line 7 which recite "the same speed" and "the same lane" lack clear antecedent basis. In claim 8 line 11-12 which recite "a speed" and "a lane" is not clear as to whether they're reciting ---the speed--- and ---the lane--- of claim 8 line 7. In claim 10 line 8 and claim 18 line 12 which recite "a signal" is not clear as to whether it is reciting the signal of claim 10 line 6 and claim 18 line 6, respectively, or another signal. In claim 12 line 7 and claim 14 line 2 which recite "a mobile station" is not clear as to whether it is reciting ---the at least one mobile station--- of claim 12 line 2. In claim 12 line 9 which recite "a base station controller" is not clear as to whether it is reciting ---a second base station controller---.

Claims 9, 13, 15-17, and 19-20 are rejected under 35 U.S.C. 112, second paragraph because they depend from rejected claims 8, 12, and 18, respectively.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Molnar et al. (6,694,154).

Regarding claim 1:

Molnar et al. disclose the radio communication system comprising: (a) at least one mobile station (see col. 3 lines 45-56 which recite radio communication including mobile terminals); (b) a plurality of base stations configured to generate a plurality of beam patterns (see col. 8 line 54 to col. 9 line 5 which recite a first set of beams associated with the current base station and a second set of beams associated with the neighboring base station clearly reads on base stations generating a plurality of beam patterns); and (c) a base station controller which is connected to the plurality of base stations,

Art Unit: 2666

and then assigns a fixed channel to each mobile station, controls the beam patterns of the base stations (see col. 7 line 61 to col. 8 line 13 which recite the base station assigning a channel to the mobile station and col. 12 lines 12-37 which recite the beamform controller at the base station controlling the beamformer and apply weighting to the individual links clearly reads on the base station controller for assigning channel and controlling the beam patterns) and accordingly carries out a radio communication with the mobile station (see col. 5 lines 46-55 which recite the communication between base station and mobile terminals), the base station controller having a device which when carrying out a transmission and a reception to and from a different mobile station to which the same channel is assigned, controls the beam patterns so that the channels do not interfere with each other (see col. 9 lines 6-17 which recite the base station using proper selection of decoding beam patterns to minimize degradation of calls, i.e. minimize interference).

Regarding claims 2, 7:

Molnar et al. disclose wherein the mobile station is a mobile station running on a road, and at least a part of the plurality of base stations are arranged along the road (see col.

8 lines 38-53 which recite the mobiles moving along a highway,
i.e. the mobile station running on a road).

Regarding claim 3:

Molnar et al. disclose the radio base station controller which is connected to a plurality of base stations configured to generate a plurality of beam patterns (see col. 8 line 54 to col. 9 line 5 which recite a first set of beams associated with the current base station and a second set of beams associated with the neighboring base station clearly reads on base stations generating a plurality of beam patterns), and then controls an antenna that is installed in each of the base stations and composed of a plurality of antenna devices (see col. 5 line 59 to col. 6 line 7 which recite the means for controlling the antenna at the base station), and accordingly carries out a radio communication with a mobile station (see col. 3 lines 45-56 which recite radio communication including mobile terminals), the radio base station controller comprising: (a) an antenna controller configured to control the antenna in each of the base stations (see col. 12 lines 12-37 which recite the beamform controller at the base station controlling the beamformer clearly anticipate the antenna controller); and (b) at least one modulating/demodulating device configured to modulate and demodulate a signal which is transmitted to and received from

the mobile station (see col. 6 lines 25-33 and col. 13 lines 42-50 which recite the modulator and demodulator, respectively).

Regarding claim 8:

Molnar et al. disclose the radio base station controller which is connected to a plurality of base stations arranged along a road, and then controls the plurality of base stations, and accordingly carries out a radio communication with at least one mobile station running on the road (see col. 3 lines 45-56 which recite radio communication including mobile terminals), the radio station controller comprising: (a) a device configured to assign the same channel to each mobile station of the same speed or the same lane (see col. 8 lines 38-53 which recite beam frequency being selected base upon speed at which the mobile terminals are traveling on the highway); (b) a device configured to detect at least one of the speed and the lane of the mobile station (see col. 8 lines 38-53 which recite Doppler shift being used to measured or determine the speed); and (c) a device which when the speed or the lane of the mobile station is changed, changes an assignment channel, in accordance with a speed or a lane after the change (see col. 8 lines 38-53 which recite beams allocated to fast-moving highway traffic and other beams allocated to less dynamic environment).

Regarding claim 9:

Molnar et al. disclose the wherein a communication interval is changed depending on the change of the speed of the mobile station (see col. 8 lines 38-53 which recite beam frequency being selected base upon speed at which the mobile terminals are traveling on the highway and col. 8 lines 38-53 which recite having beams allocated to fast-moving highway traffic and having other beams allocated to less dynamic environment).

Regarding claim 10:

Molnar et al. disclose the radio mobile station which is connected to a plurality of base stations configured to generate a plurality of beam patterns (see col. 8 line 54 to col. 9 line 5 which recite a first set of beams associated with the current base station and a second set of beams associated with the neighboring base station clearly reads on base stations generating a plurality of beam patterns), and then carries out a radio communication with a base station controller that can control an antenna installed in each of the base stations (see col. 12 lines 12-37 which recite the beamform controller at the base station controlling the beamformer and apply weighting to the individual links clearly reads on the base station controller and controlling the antenna) and composed of a plurality of antenna devices (see col. 5 line 59 to col. 6 line 7 which recite the devices for controlling the antenna at the

Art Unit: 2666

base station), wherein the radio mobile station transmits a signal including at least information to identify the radio mobile station, even if there is not a signal to be transmitted to the base station controller (see col. 7 line 38 to col. 8 line 13 which recite the mobile transmitting the mobile identification number, the base transmitting the channel identification, and means for identifying the presence of mobile terminals).

Regarding claim 11:

Molnar et al. disclose the radio base station controller which is connected to a plurality of base stations arranged along a road, and then controls the plurality of base stations and accordingly carries out a radio communication with at least one mobile station running on the road (see col. 3 lines 45-56 which recite radio communication including the base station and mobile terminals and col. 8 lines 38-53 which recite the mobiles moving along a highway, i.e. the mobile station running on a road), wherein a boundary between radio base station controllers adjacent to each other is positioned in a portion in which a movement destination of the mobile station on the road can be pointed out (see col. 8 line 54 to col. 9 line 5 which recite the neighboring base station beam used for handoff as the mobile

is running on the road clearly reads on positioning the base station controllers as being adjacent).

Regarding claim 18:

Molnar et al. disclose the radio communication method comprising the steps of: (a) detecting a start of a communication between a predetermined first base station connected to a first base station controller and a mobile station running on a road (see col. 7 line 61 to col. 8 line 13 which recite the step of detecting the presence of the new mobile station within the cell and col. 8 lines 38-53 which recite the mobiles moving along a highway, i.e. the mobile station running on a road); (b) requesting a hand-over process to the mobile station (see col. 8 line 54 to col. 9 line 5 which recite the step of mobile station handoff from neighboring base station); (c) transferring to a second base station controller, a signal to be transferred through the predetermined first base station to the mobile station (see col. 8 line 54 to col. 9 line 5 which recite informing the neighboring base station what beam the current base station is using at handoff for communication with the mobile); (d) transmitting the signal to the mobile station through a predetermined second base station connected to the second base station controller (see col. 6 lines 8-24 which recite the base station transmitting to the mobile terminal

Art Unit: 2666

using the selected beam); and (e) selecting a signal in which a reception state is better, from two signals received by the mobile station (see col. 7 lines 52-60 which recite selecting the beams based on strength and quality measurements).

Regarding claim 19:

Molnar et al. disclose wherein the predetermined first and second base stations are arranged close to a boundary between the first and second base station controllers (see col. 8 line 54 to col. 9 line 5 which recite the neighboring base station beam used for handoff as the mobile is running on the road clearly reads base stations being arranged close to a boundary between the controllers).

Allowable Subject Matter

6. Claims 12-17 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

7. Claims 4-6 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Obayashi et al. disclose an active array antenna system.

Shoki discloses radio communication system using portable mobile terminal.

Harbin et al. disclose land-based wireless communications system having a scanned directional antenna.

Velazquez et al. disclose communication system using geographic position data.

Kornestedt et al. disclose method, and associated apparatus, for determining cell relationships in a radio communication system.

9. Any response to this nonfinal action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306, (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (2600 Receptionist at (703) 305-4750).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

SH

July 9, 2004



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